One Creationist vs. Two Evolutionists Debate: Intelligent Creation vs. Mindless Chaos

Creationist vs 2 Evolutionist

By Larry Wessels

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Christian Answers of Austin, Texas
9009 Martha's Drive
Austin, TX 78717

Website: www.biblequery.org
Online Sermons: www.sermonaudio.com/christiananswers

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This particular video deals with a formal debate on the subject of scientific evidence for intelligent design vs scientific evidence for a non-theistic, chaotic, random, metaphysical, Darwinian evolution for all we see in the universe.

Before we begin that debate, I wanted to preface it with the following item. Here's a clip from our YouTube video "Creation Science (God) versus Evolution (myth) #4: Evidences for a Young Earth."

Larry Wessels. Are there any scientific evidences for a young earth and what are they? And we have on the chart here for folks at home and I'll go to it and I'm going to have Dr. Gerard start to analyze these points. But we're going to look at evidences for a young

earth and point 1 states: too much helium in hot rocks. Now, you know, are we talking about rock-n-roll here, or what? Go ahead and explain that to the folks at home.

Dr. Gerard. Alright, the US government did a survey all the way back in the 1970s in which they took their very deep core samples from the center of the earth, from very far down in the earth, in which they were measuring various structural qualities of what they call precambrian granites, what they believe to be the oldest basement rock on the face of the earth and what they found in those granites was something very peculiar. They knew the granites were hot. They measured the temperatures to be over 200 degrees centigrade but they found helium gas trapped in the zircoin crystals in those rocks. The problem with that is this: if that helium gas was heated to the temperature that those rocks were, it would only take between 6 and 7,000 years for all that helium to be pushed out of the rock. Hot gases escape out of the rock and they escape to cooler temperatures which would be closer to the surface but there was still helium in that rock. Where did the helium come from? And this is one of the strongest evidences for a young earth because there are no assumptions involved with this. It takes 4 ½ billion years for uranium to go all the way down its decomposition, its radioactive decay scale, to turn into helium so that helium would not have been supplied fast enough from any radioactive material around there but the key is that within 6 to 7,000 years all that helium would have been forced out of that rock and yet it's still there. Absolute evidence of a very young age for what the scientists say, what the evolutionists believe, are the oldest rocks on the face of the earth. And I want to stress this very very strongly: you don't need to make any assumptions in this except that the laws of chemistry and physics always work.

Larry. Outstanding. So that the mere fact we have so much helium...

Dr. Gerard. ...in those rocks tells us that we're dealing with a very very young age for those rocks. Less than 7,000 years. Strong indicator.

Larry. You know, a lot of people have a lot of difficulty with that but when you're talking about evolution, it's something that has been so indoctrinated in all of us. You get it in your religion. The seminaries teach it. A lot of religions teach evolution and then this religion of evolution as we believe it to be, I believe evolution is a religion. It's just religious faith for origin of a mindless universe and billions of years and a big bang and all that kind of stuff. It's just a religious concept.

Dr. Gerard. And Larry, it's interesting that even the evolutionists say that and I keep going back to Sir Karl Popper who is called the greatest philosopher of science who ever lived, who is an evolutionist and who says flatly that evolution is not a scientific theory but a metaphysical research program. He goes on to say it's important to show, therefore, that Darwinism is not a scientific theory but metaphysical. He calls it the equivalent of a religious belief.

Larry. Right. Very good. And I think, Dr., you're aware of I think a Dr. Barron...

Dr. Gerard. Louis Barron.

Larry. Louis Barron, a french scientist.

Dr. Gerard. A french scientist who says evolution is a fairy tale for grown-ups. This theory has helped nothing in the progress of science. It is useless. Louis Barron is an evolutionist and yet listen to what he's saying: evolution is a fairy tale. A fairy tale for grown-ups. It's a myth. Dr. T. A. of the US Atomic Energy Commission went on to say at one point that those scientists who go about teaching that evolution is a fact are great con men. Con men.

Larry. Well, it seems like when it comes to evolution, it's just storytelling. It's like who can come up with the best story.

Dr. Gerard. And the other problem with it, Larry, is that no matter what evidence we purport to disprove it, they simply change the theory. And even the evolutionists, several evolutionary scientists have said, "Wait a minute, our theory is so plastic it can explain everything no matter what you find," so that there's no way to disprove it, which means that it is technically not a scientific theory. In order to qualify as a scientific theory, again, back to Popper, you must be able, at least in principle, to theoretically or actually disprove a scientific theory. Since evolution cannot be disproven, it doesn't even count for a theory.

Larry. Just to reiterate one more time as we've been talking, evolution is simply a religious belief and people will not look at facts sometimes when their religion gets in the way.

Dr. Gerard. Let me just make one other comment. We're talking here about evidences for the age of the earth. We need to remember that this is the area that most people will question the Scriptures. This is in accordance with 2 Peter 3:4. This is the area that in the latter days we should expect most people to question, is this age of the earth, and regardless of what someone's technical background is, everyone has seen on television the millions and billions of years as purported for dinosaur fossils or whatever it is, so that this becomes the chief area in which people attack the Scriptures. There are more scientific measurements that document a young age of the earth than there are the documented old age of the earth. And I would say this: there is not one old age measuring device that is not so seriously flawed that it should not be totally dismissed.

Larry. Very well said. Alright, now we've got less than 30 minutes in this show left, folks, and so we're going to have to fly on this kind of stuff so we'll do the best we can. Okay, Dr., we continue to look at evidences for a young earth. Let's go to point 2 here: low helium content in earth's atmosphere.

Dr. Gerard. Right, Dr. Larry Vardiman from the Institute of Creation Research said how much time would it take to get our present concentration of helium in the atmosphere if we started with an atmosphere that had absolutely no helium in it and the only place we regenerated that helium was from the radioactive decay of various radioactive elements?

As far as we know, that's the prime area from which we get helium, from the decay of radioactive elements, the last element that it will decay to or one of the byproducts that the decay of radioactive elements produces is helium. So if we look at the amount of helium in the atmosphere and look at the rate that it's being generated by radioactive decay, we would get a maximum age for our atmosphere of only 2 million years. Now, it's believed that some helium escapes the atmosphere and mathematically it may be demonstrated, however, there is also helium that enters the atmosphere from outer space that's formed from cosmic ray bombardment and that would tend to generate more than is leaving. So we can set a maximum limit of no more than 2 million years for the earth's atmosphere based upon how much helium is being formed by radioactive decay.

There is a problem, however. We know that when volcanoes erupt, they spew helium into the atmosphere so that 2 million year date would decrease drastically, especially if there was a tremendous amount of volcanic activity as we believe occurred during the worldwide flood. So again, we don't get an age of the earth's atmosphere, we get a maximum limit to where we can say it can be no older than this and from the measurement of helium in the earth's atmosphere, we know that it could be no older than 2 million years. Far, far short of the 4 ½ billion years that the evolutionists require.

Larry. Alright. Point 3: spiral galaxies. Now we're getting into astronomy and things of this nature.

Dr. Gerard. Okay. The astronomers tell us that they believe anyway that they can calculate the mass of these spiral galaxies and that they can calculate the speed at which the arms of these galaxies rotate. Well, if you take that mass and you take that speed, what you'll find is that the outer fringes of those arms are moving faster than escape velocity and the inner parts of the galaxies are spinning much faster than the outer parts. Well, within less than 100 million years, those galaxies would have completely degenerated. The outer parts would have broken away. The inner parts would have completely disbursed and you would have no spiral galaxies. And that's for every spiral galaxy that we observe and yet even though within 100 million years there should be no spiral galaxies, we find spiral galaxies all over the universe. Which tells us what? That the age of the universe, at least those galaxies, should be less than 100 million years old. The evolutionist, on the other hand, requires that those galaxies be there for billions and billions of years, if I could quote a friend of mine, and that that just doesn't fit with the evidence that's available and what they believe is the mass and the velocity involved. So the spiral galaxies, instead of speaking very strongly for an old universe, speak very definitively for a young one.

Larry. Excellent. Alright, point 4: short period comets. I don't know if you remember about Comet Kohoutek and Halley's Comet and all these kind of guys.

Dr. Gerard. Let's talk about it. Well, you know, Halley's Comet, it was very interesting this last time it passed, it was sort of a fizzle. It wasn't as bright as everybody thought it would be and a lot of astronomers told us not to expect it and the reason is every time a comet passes by the sun, the sun's gravitational attraction rips off some of the comet's

material. Well, calculating what the largest comet could possibly be that wouldn't totally disrupt the solar system, scientists have been able to show that within a very short period of time, like within 15,000 years, the sun would have destroyed even the largest comet. So the maximum amount of time that short period comets could exist in our solar system is a period of about 15,000 years. That's the maximum limit. After 15,000 years, the sun would have torn even the largest short period comet apart and yet we still see many short period comets. The short period comets speak very definitively for a very young age for our solar system.

Now, the evolutionary scientist has had to go to extremes, I believe, to explain away the short period comets. They believe in something called Oort Cloud which resupplies comets to our solar system. In order for that cloud to spit comets into our solar system it would have to be very precise to get the comets to have that parabolic orbit around the sun. And furthermore and this is the most important thing, Oort Cloud has never been observed. Things that are not observed usually don't fall in the realm of science, they fall in the realm of blind faith and that's what the evolutionist has to jump to.

You know, Larry, I get so tired of people telling us, "Oh, you Christians have blind faith," when in fact I see the evolutionist as the one who has blind faith to preserve his timescale, his god of large periods of time, he has to resort to the ridiculous, to the unseen, to a mythical character that no one has even observed.

Larry. Yeah, in fact his god almost seems to be time itself in many ways.

Dr. Gerard. And it is time itself. That is the god of evolution and that's why this area is so important. The evolutionist now would admit that the fossil record doesn't show evolution and genetics doesn't show evolution, etc., what they will never admit is that we don't have enough time for evolution.

Larry. Right, because that's their god and right now you realize that you're attacking the idol of evolution. Shame on you. No, no. Okay, down here to number 5: sodium content of the oceans.

Dr. Gerard. Excellent. Dr. Steve Austin from the Institute for Creation Research did a very extensive study on sodium into the oceans. We know that sodium, sodium chloride, is dumped into the ocean from the various rivers and the rate at which it's put into the oceans has been measured very very accurately. We also know that volcanic activity underneath the ocean adds a certain amount of salt every year and we know that salt is removed from the ocean by the lapping of ocean waves on the shore and some other different processes such as evaporation etc. Dr. Austin took all of those influx and efflux factors into account, took the rates at which sodium is added to the ocean and is removed from the ocean, and showed that sodium is added to the ocean much much quicker. He showed that if one started with a completely pure ocean, 100% sodium free, using these very well measured and very well known rates of sodium entering and leaving the ocean, in less than 62 million years we would arrive at our present concentration of sodium in the oceans around the world. And that concentration is fairly in equilibrium, it's fairly

constant no matter where you go. The maximum age that the oceans could be, not the age but the maximum age, would be a limit of 62 million years based upon the sodium content of the oceans. Very good study. Very well measured. It's something that's here on earth. Again, a young age indicated. Not billions of years, less than millions of years.

Larry. Which evolutionists could not accept by any stretch of the imagination.

Dr. Gerard. Millions of years is not enough time for evolution. We know that billions of years is not enough time for evolution. We talked about Dr. Morrow which had said that given 5 billion years and all you wanted to evolve was one E. coli bacteria, the probability would be 1 chance in 10/100 billionth power. So while billions of years is better, millions of years is totally unacceptable.

Larry. Alright, now with that, let's go to something I've been wanting us to talk to for a long time here. Mount St. Helens, the eruption in 1980. It really has a lot of important information for us pertaining to key evolutionary concepts related to like the Grand Canyon. You know, we think of all the petrified forests they talk about in Yellowstone National Park and these kinds of issues. As we look on our chart here, of course we do have Mount St. Helens. I would like you to address the important discoveries made by that volcano in 1980 pertaining to the Grand Canyon, Yellowstone, and of course the idea of missing strata which would then, in turn, mean missing millions of years of time and things of this nature.

Dr. Gerard. It's very interesting because the Grand Canyon has been a tremendous mystery for evolutionists. Number 1, you moved 1.2 million tons of sediment by what they thought was the Colorado River and yet when you go to the end of the Colorado River, you don't have 1.2 million tons of sediment to form this tremendous delta. There should be a tremendous delta at the end of the Colorado River. Evolutionists have noted that the Colorado River is an under-fit river, in other words, it's too small to carve the Grand Canyon. The side canyons are u-shaped. Usually when water erodes, it forms v-shaped canyons. The Colorado River flows from east to west and it cuts the Grand Canyon from east to west. The Colorado River, if it would have cut through the Grand Canyon and going from east to west, would have had to go uphill because the land in the Grand Canyon rises from east to west. So there are a lot of problems with that.

What we find is a question of how did we get all the layers at the Grand Canyon and how did we get those layers to pile up on top of each other, how did we cut the canyon through those layers. And the best evidence for how that occurred is when we look at Mount St. Helens. Rather than taking millions of years, what we find at Mount St. Helens is that we had this catastrophic volcanic eruption, after the eruption, it dammed up the Toutle River with debris and logs etc. About nine months after the eruption, that dam broke, water came rushing out of the tremendous lake that was formed behind it and carved in solid rock in less than one day a canyon identical to the Grand Canyon but $1/40^{th}$ the scale so that we've actually seen a canyon identical in features to the Grand Canyon carved in less than one day. The best explanation for the Grand Canyon is that it was carved as a result of a catastrophe, possibly a worldwide flood.

The other thing that we see at Mount St. Helens which is very very interesting, at the bottom of Spirit Lake the trees that surrounded the volcano were just blown completely down. The bark and the trees, many of the trees were blown into Spirit Lake, the bark was completely stripped off these trees. That bark settled to the bottom of Spirit Lake and formed a gigantic layer of peat. Dr. Steve Austin who has done a lot of the research in that area reports that if Mount St. Helens were to erupt again, from the heat it would turn that peat into coal and we would have the instantaneous formation of coal not over millions of years but instantaneously very very rapidly.

The other thing we see at Mount St. Helens answers one of the mysteries from Yellowstone Park. Yellowstone Park, we see trees standing upright extending over many layers of rock. The evolutionist has to believe that those trees stood upright over the millions of years that it took for those rocks to be deposited. That doesn't make a lot of sense because trees rot and decay very very quickly. Even when wood is treated with our current chemicals, it still rots and decays. How did those trees get between all those layers of rock? We're seeing exactly the same thing at Mount St. Helens. When those trees were blown down and floated on Spirit Lake, the roots, the ball of roots at the end of the tree became waterlogged before the trunk. Those roots caused the tree to tip over, sink to the bottom of the lake, and what we're finding now is that layers of silt and ash that are going to turn into rock, are building up slowly over those upright logs and will form just what we see at Yellowstone Park. Not over millions of years or hundreds of millions of years, but rather rapidly within a few years before those trees can rot and decay.

Larry. And the missing strata?

Dr. Gerard. The missing strata at the Grand Canyon is another very very interesting feature. What we find are layers of rock that fit perfectly on top of the other layers of rock, however, at the Grand Canyon we find missing from the rock layers the orlesian, silurian, devonian rock layers. We're missing a couple of hundred million years of rock. Where did it go? The evolutionist would tell us erosion, however, those layers of rock sit very very comfortably with what we call a smooth bedding plane on top of the rock layers that are above it. We have missing rock but that missing rock just doesn't fit any evolutionary scenario.

Larry. It destroys that idea of uniformatarianism.

Dr. Gerard. Exactly.

Larry. Okay, well, I thought that would be of great interest to a lot of people who have gone to those places and seen all those evolutionary signposts everywhere that tell you about the petrified forest in Yellowstone.

Dr. Gerard. Just one other quick mention: the rock, the lava flows at the top of the Grand Canyon when we use radiometric dating methods, date older than the rock lava flows at

the bottom of the canyon. In other words, the rocks at the bottom are younger. That doesn't make any sense at all.

Larry. Exactly. Of course, the evolutionist isn't going to go out of his way to tell you about those problems, is he?

Dr. Gerard. No.

Larry. And you probably will never see that in the textbooks.

Dr. Gerard. Never do it. No.

Larry. Because it just kind of messes up the whole religion, doesn't it. But anyway, let's get back to this evidence chart. Let's see, we were talking about rivers, the Colorado River. In fact, they were saying the Colorado River cut the Grand Canyon but it would seem to me that if one river can cut a canyon like that, any river could do such a thing and so there should be Grand Canyons wherever there is a river. I guess people don't think about that but it's kind of interesting.

Dr. Gerard. And we know it's a hydrodynamic principle that while a river is cutting down, it's not cutting laterally either. It's going to cut in one direction. So the Colorado River just doesn't look like it cut the Grand Canyon.

Larry. Right. Going from the Colorado River, let's go to your point number 7: the Mississippi River delta.

Dr. Gerard. That's my hometown so I can talk about that. It's interesting, we know how rapidly the Mississippi River deposits silt at the bottom of the river and it is very rapid. That's why every year or several times a year, the mouth of the river has to be dredged to allow boats to come through. Even in Mark Twain's day and he's the one that wrote this, he was able to take those simple calculations of how rapidly silt is deposited, the depth of the Gulf of Mexico, and to point out that within less than a million years the mouth of the Mississippi, the delta, should extend all the way to the tip of South America. So within a million years, the Mississippi River should have already gone past the Gulf of Mexico. That doesn't make any sense and that's not what we see.

Larry. I see. Alright, about ten minutes or so to go. We've got: eroding continents. What do you have to say about that, Dr.?

Dr. Gerard. Alright. We know about how fast the continents erode and it's more in some places and less in others. Within about 15 million years, the continents should have been eroded all the way down to the level of the ocean all over the place. Now, it's pointed out that, "Well, we believe that the continents are uplifting at the same speed approximately that they're eroding." That's a tremendous leap of faith because we haven't measured that all over the world so to say that those continents are eroding at the same speed that they are being uplifted takes, to me, a tremendous leap of faith. That's almost believing in a

miracle. And again, to believe that that would have occurred over 15 million years is tremendous. The mechanism by which those continents are uplifting at exactly the precise rate to keep them from disappearing is, again, something that remains a mystery and is not discussed. Fifteen million years to the geologist is a very short period of time. It should be rising very very fast.

Larry. Once again, it highlights the religious overtones and undertones of this whole concept of evolution. Okay, with that, let's move on down here. In fact, this came up today. Just a point of interest to our listeners and viewers, we were at the university campus today and I got a little sunburn here or whatever out there. It was a hot day and the students were out there on the West Mall of the campus. One of the students brought up this point, point 9 here: the rings of Saturn.

Dr. Gerard. I believe it was in Sky and Telescope Magazine, 1982, somebody pointed out that based upon the rotation of Saturn and based upon various gravitational factors, that the rings of Saturn being composed of a very very light particulate dust, would have completely dissipated, would have completely disappeared within about a 10,000 year period so that within 10,000 years the rings of Saturn should be gone and yet everyone believes that Saturn and all the planets in the solar system, are about 4 ½ billion years old as the evolutionist tells us, about the age of our solar system but in less than 10,000 years those rings would have completely disappeared. So here, again, we have evidence that contradicts the religious belief of a very very old earth, a very old solar system. Those rings should be gone in 10,000 years.

Larry. Alright. Number 10: missing solar neutrinos. Now, what is a neutrino, first of all, and then go ahead and explain the rest.

Dr. Gerard. A neutrino is a subatomic particle that results from nuclear fusion. All the way about 100 years ago, just a little bit less than 100 years ago, Lord Kelvin was able to demonstrate that if the sun was burning, by gravitational collapse it would completely burn out in 30 million years, which was very disturbing to the evolutionist. Well, they hypothesized that if the sun was burning by nuclear fusion reaction, it could burn for billions of years and so they came up with that theory. There's only one problem: if the sun is burning by nuclear fusion, it should be emitting enormous amounts of neutrinos. Well, Bacall and Davis, two researchers, went to a South Dakota gold mine in the 1970s and started testing to collect these neutrinos to document that the sun was burning by nuclear fusion, the only problem is that they got only about 1/3 of the neutrinos that they should have gotten which speaks very strongly against the sun being powered by nuclear fusion and that leaves, by default, this concept of the sun burning by gravitational collapse or maybe even a combination, some nuclear fusion, some gravitational collapse, but not enough nuclear fusion to fuel a 4 ½ billion year old sun. Again, speaking against billions of years but the evolutionist to get around this has hypothesized that maybe there are neutrinos that have no mass that never could be detected. But again, that's believing in something that you can't see and you can't test. It's the same as saying that elephants only fly when they're invisible and that's why we don't see them. It's not good science.

Larry. I totally agree. Alright, number 11 then, moving right along: butterflies and moths. These have to do with problems, not so much evidence of a young earth as some of these other points that we've been bringing up but more just problems in understanding how anything could evolve the way something like a butterfly would evolve.

Dr. Gerard. You know, one of the things that the evolutionist has said and Steven J. Gould himself said it, that one of the problems with evolution is not only that we don't find transitional forms in the fossil record, we can't even invent those transitional forms in our mind. One of the problems is to figure out where things that go through a larval stage, how did they evolve like butterflies and moths? They go from being a worm or a larva, spinning a cocoon and then turning into a butterfly or a moth. The incredible thing is that when they are in that cocoon, they're entire body dissolves into a soup and from that soup it reforms into a butterfly. From worm to a completely liquid soup into a butterfly. And as Dr. Gish, who is a creationist but also Dr. Michael Denton who is not a creationist, they both asked this question: what animal or what evolutionary scenario would lead to such an impossible event? There is no evolutionary explanation for it at all. And in all of his debates, Dr. Gish challenges the evolutionists, "Can you give me the evolutionary sequence that would lead to butterfly soup and how does that benefit the creature?"

Larry. Right and there are other things. We could bring up just a host of different creatures that would... bombardier beetles, I think of explosive chemicals, how did he evolve that? There are all kinds of things.

Dr. Gerard. Duckbill platypus. Impossible scenarios for the evolutionist.

Larry. Right. Right. Which are never again brought up in the textbooks of our schools or whatever. Okay, Dr., it's obvious based on point 12 here on the chart, can scientists be creationists, I mean, nobody in their right mind would believe in creation. You couldn't even be a scientist on that level. What do you have to say about that?

Dr. Gerard. You know, it's interesting, some of the great scientists, greatest scientists of all time, have been creationists and have been Christians. Isaac Newton who invented calculus and developed the laws of motion was a Christian creationist. Lord Kelvin was a Christian creationist. Boyle was a Christian creationist. Joseph Lister. Louis Pasteur, the greatest scientist that France ever produced was a Christian creationist. Von Braun, the man who developed the NASA space program was a Christian creationist. We looked at a lot of scientists who are creationists, who are Christians, so much so that it caused an atheist, a gentleman by the name of Whitehead, Dr. Whitehead who helped develop the hydrogen bomb made the statement that had it not been for Christianity, there would be no science.

Larry. Very well said. I'd like to mention too, I've got a few notes here. You can mention also Francis Bacon. You mentioned, of course, Isaac Newton. There is Robert Boyle who was heavily involved in chemistry. And there are a number of sciences that were started by creation scientists that never get any credit for it.

Dr. Gerard. Comparative anatomy, Louis Agassiz and Jacques Cuvier, and comparative anatomy now is the evolutionists' calling card, allegedly, and yet those studies were initiated by Christian creationists.

Larry. That's right. And you have computer science.

Dr. Gerard. Babbage who developed the first computer was a Christian creationist.

Larry. Dynamics. Electronics. Electrodynamics. Electromagnetics. And my list goes on and on and on.

Larry. Now we present a formal debate between a creation scientist and two evolutionists. Dr. Walter Brown will represent the creation science position. Dr. Walter Brown received a Ph.D. In mechanical engineering from the Massachusetts Institute of Technology, MIT, where he was a National Science Foundation Fellow. He has taught college courses in physics, mathematics and computer science. Brown is a retired Air Force full Colonel, West Point graduate, and former Army Ranger and Paratrooper. Assignments during his 21 years of military service included Director of Benet Laboratories, a major research development and engineering facility; tenured Associate Professor at the US Air Force Academy; and Chief of Science and Technology Studies at the Air War College. For much of his life, Walt Brown was an evolutionist but after years of study, he became convinced of the scientific validity of creation and a global flood. Dr. Brown is the author of "In the Beginning: Compelling Evidence for Creation and the Flood."

Opposing Dr. Brown will be two evolutionists, Dr. Dick Richardson, who has a Bachelor of Science in Plant and Soil Science and Master of Science in Plant Genetics and a Ph. D. in Genetics from North Carolina State University. And Steve Bratteng, who has a Bachelor of Science in Biology and Biological Science and a Master of Arts in Botany.

Unfortunately, approximately half of Dr. Brown's opening comments in the upcoming debate were not recorded, thus his opening statement will begin already in progress. Please listen carefully to this debate.

Dr. Brown. So if the big bang occurred, you would start with absolutely no complexity or information. The second law in its most general form says that the total information and complexity in any isolated system continually decreases. That does not fit the evolution model which says the complexity around us has been increasing. I believe Sir Isaac Newton said it best, he said that someone must have wound this universe up. I believe that the universe could not be an isolated system. Some external intelligence and power must have acted upon it and that only fits the creation model.

Another consequence of the second law is that the universe and time must have had a beginning. If the universe were infinitely old, it could have absolutely no complexity or information left in it. It has information. You remember those 4,000 books in each of

your 100 trillion cells? Since the universe has complexity and information, it can't be infinitely old. If it's not infinitely old, it must have had a beginning.

The big bang theory is quite popular among evolutionists, unfortunately, people are usually not told about all of its problems. The discovery of a very uniform type of cosmic background radiation caused many to believe in the big bang, however, recent satellite data has shown that this radiation is spread out so uniformly that if the big bang produced it, matter could not have clustered gravitationally to form stars and galaxies, nor could the two most massive objects now known in the universe have formed, the recently discovered great wall and the great attractor.

The big bang would only produce hydrogen, helium and a little lithium. Stars of a certain size should still contain just those original three elements but those stars can't be found. If the big bang occurred, why do some galaxies spin one way and other galaxies rotate another? How could an outward explosion of only gas produce all that rotational energy? The big bang is simply inconsistent with what we see.

According to evolutionary theory, geological formations are almost always dated by their fossil content, especially by certain index fossils of extinct plants and animals. The age of the fossil is derived from the assumed evolutionary sequence but the evolutionary sequence is based on the fossil record. This reasoning is circular and it has produced many contradictory results.

Practically nowhere on earth can one find the so-called geologic column. At most locations, most geologic periods are missing. Even within the Grand Canyon, over 150 million years of this imaginary column are missing. Using the assumed geologic column to date fossils and rocks is fallacious.

The radiometric dating techniques at first glance seem to support an earth that is 4.6 billion years old. A major assumption, however, that underlies all radiometric dating techniques is that the rates of radioactive decay have been constant for 4.6 billion years, even though we've only observed radioactive decay for 90 years. This bold, critical, and untestable assumption is made even though no one knows what triggers radioactive decay.

The public has been greatly misled concerning the consistency and trustworthiness of radiometric dating techniques. Many of the published radiometric dates can only be checked by comparisons with the assumed ages for the fossils that sometimes lie above and below radiometrically dated rock. In a study of over 400 of these published checks, about half, the radiometrically dated ages were at least one geologic period in error indicating that something is drastically wrong. One wonders how many other dating checks were not even published because they too were in error.

There are many geological mysteries on the earth that I believe can only be explained in terms of a global cataclysmic flood. It would take at least an hour to describe these mysteries to show how the flood can best explain them; to show that evolutionary

explanations are inadequate; to establish the proper background for what happened during this catastrophe and to trace out the major events of the flood; and to make predictions that in future years will be the basis for testing and potentially falsifying my explanation. We don't have time to get into this huge subject although I did this morning at a seminar which many of you attended. If Dr. Richardson and Mr. Bratteng believe that evolutionary theories give an adequate explanation for what caused these mysteries, then I will be happy to point out the contradictory evidence.

Most evolutionists consider the fossil record to be their strongest evidence, actually the fossil record clearly shows rapid death and burial by sedimentary material laid down through water. Many fossils such as fossilized jelly fish, show by the details of their soft fleshly portions that they were buried rapidly before they could decay. Billions of other animals were buried in mass graves and then twisted and contorted positions. Extreme flattening of fossils and fossils that cut across two or more strata also imply violent and rapid burial.

Every major mountain range on the earth contains fossils of sea life. This all fits the creation view of a catastrophic global flood. Also, practically every ancient culture on earth has legends telling of a traumatic flood. Bones of many modern looking humans have also been found deep in rocks that by evolutionary dating techniques were supposedly formed many millions of years before man began to evolve. Published examples include the Calaveras skulls and hundreds of their stone-eating utensils. The Castenedolo skeletons, Reck's skeleton and many others, these human remains are ignored by evolutionists.

Man-made objects have been found encased in coal: a thimble, a spoon, an iron pot, an iron instrument of some sort, an 8 carat gold chain, and a metallic vessel inlaid with silver. Many other out of place artifacts have been found inside deeply buried rocks such as nails, a screw, a strange coin, a clay figurine, and a strange hammer. By evolutionary dating techniques, these objects obviously made by man, would be hundreds of millions of years older than man.

Again, something is wrong. If evolution happened, the fossil record should show continuous and gradual changes from the bottom to the top layers and between all forms of life. Just the opposite is found. There are millions of missing links. To bridge these gaps, evolution requires too many miracles and leaps of faith. What could have possibly evolved between a star fish or any other animal without a backbone, and the fish, an animal with a backbone. There must have been thousands of intermediate forms leading up to the fish. None have been found. Insects, a class comprising 80% of all know animals living or extinct, have no evolutionary ancestors and there are hundreds of other gaps as well. Furthermore, many complex species appear suddenly in the lowest layers: sponges, worms, mollusks, corals, trilobites and brachiopods appear suddenly with no sign of gradual evolutionary development. In fact, representatives of all animal and plant philae have now been found in this bottom Cambrian layer including: flowering plants, angiosperms, vascular plants and fossils of fish, vertebrates. This Cambrian explosion

certainly contradicts the evolutionary story which we were all taught that there is a nice gradation from simple at the bottom to complex at the top. That is simply not true.

Also, the vertical sequencing in the fossils is frequently not in the assumed evolutionary order. For example, several different scientists have found spores and pollen of gymnosperms and angiosperms near the bottom of the Grand Canyon. Because these layers were supposed laid down before the explosion of multicellular life, these results are absolutely devastating to evolution and are precisely what one would expect of a worldwide flood.

We have been greatly misled by stories of primitive ape-like men have been found. Piltdown Man is now an acknowledged hoax, perhaps the greatest hoax in all of science and yet it was in the textbooks for over 40 years.

Nebraska Man, shown here, was based on a single tooth. That tooth turned out to belong to an extinct pig.

Prior to 1977, the known remains of Ramapithecus consisted merely of a handful of teeth and jaw fragments. It is now known that these fragments were pieced together incorrectly by Louis Leakey and others so as to resemble portions of the human jaw. Ramapithecus was just an ape.

The discoverer of Java Man later acknowledged that Java Man was similar to a large gibbon and that he had withheld evidence to that effect.

Peking Man is considered by many experts to be the remains of apes that were systematically decapitated and exploited for food by humans.

Detailed computer studies of the Australopithecines have shown that they are not ancestral to man and living apes. The Australopithecines, which were made famous by Louis and Mary Leakey, are actually quite distinct from both man and living apes.

Lucy, a type of Australopithecine, was initially believed to have walked upright in a human manner. Studies of Lucy's entire anatomy, not just her knee joints, now show that this is highly improbable. Lucy probably swung from the trees.

For about 100 years the world was led to believe that Neanderthal Man was stooped and ape-like. Recent studies show that this erroneous belief was based upon some Neanderthal men who were crippled with arthritis and rickets. Neanderthal Man, Heidelberg Man and Cro-Magnon Man were completely human homo sapiens. Artists' depictions, especially of the fleshy portions of their bodies, are quite imaginative and are not supported by the evidence. Furthermore, the dating techniques are questionable.

This has been very brief. I've written a book, it's on the table back there, that goes into much more detail and gives references on all of these things and much more. These evidences are new to many people but based upon national polls by respected secular

organizations, over 85% of the American people want these evidences brought into the schools. Our schools and universities should thrive on the intellectually challenging issues. Religious matters should stay out of the science classroom. I hope you can see that these religious aspects can be avoided if we stay to the right of that red line I showed you earlier, and if we only talk about evidence, what we can observe and measure today.

One of the leading evolutionists and paleontologists of our time is Dr. Colin Patterson of the British Museum of Natural History. Years ago he wrote a very readable book on evolution, more recently he delivered this speech in Chicago at the American Museum of Natural History in New York. Dr. Patterson has had quite a change of thinking. He is now saying that evolution is a faith; that all his life he had been duped, those are his words, duped into believing in evolution; that evolution not only conveys no knowledge, it is positively anti-knowledge; that evolution is detrimental to the science of taxonomy and that he has conducted experiments that have precisely falsified evolution. I contend that our society has been indoctrinated by evolutionism, a very faulty theory that has been harmful to the advance of science.

Evolution is a theory without a mechanism. All the science is not being taught. Many evidences supporting creation are being censored. Many science teachers and professors do not even know the evidences opposing evolution because they themselves were never told about them. They too were victims. Most students only hear one theory of origins. They are taught what to think rather than how to think.

Thank you very much.

Speaker. Thank you, Dr. Brown. We'll now take a five minute break. Five minutes.

Alright, great. We will start the second side of this first portion of our debate with the evolutionist side given by Dr. Dick Richardson and Mr. Steve Bratteng. Dr. Richardson, Mr. Bratteng.

Dr. Richardson. I don't think there is going to be a whole lot of adrenaline flowing tonight. I agreed to a discussion and I think that's exactly what we're going to have because it turns out that I find a lot of things that Dr. Brown has said I completely agree with. In fact, I was learning some things. When I teach evolution or when I teach genetics, one of the first things I say in class is that all scientific models are wrong. That's the way science is set up. We propose a model and if it cannot be refuted, it's a metaphysical model, it's not a scientific model. Then we spend the rest of the efforts of the experimentation and theory trying to find the limitations where that model is a reasonable approximation of what we see. And what happens is a lot of times we actually end up using models in certain situations that we know are wrong.

As an example, this points up to me and this points down to me. That's based on the flat earth model and it's quite helpful. If I go to read a map, it's much easier to read when it's out flat than if I'm trying to figure it out on a globe and I can fold the map up when it's a flat sheet of paper. That's flat earth models for those purposes and it's very useful. I

would not even consider trying to work with a globe if I were going to drive from here to, let's say, Albuquerque. It turns out that the real model, of course, that would be more accurate is that this and its continuation this way is a radius that goes to the center of the globe and extends out into space, and if we go to Albuquerque and we pointed what we thought was up there, in fact it would be slightly tilted to what I would do here and call it the same radius. That would be the globe model.

We use in biology a number of models that we know are wrong and we continue to use those but in the testing of those models, we try to find where they give us a reasonable approximation and that's all we're trying to do. Whether we believe that it leads us to an ultimate truth or not is not science. That's not a part of the domain of scientific methodology. That's a belief system and it varies from one person to another and it varies in my case from one time to another. I really haven't settled down on a belief if science leads us to a truth. You see it so waffling around that's it hard to get a fix. Is it actually being consistent or not? And if we look back into the history of science, then we have gone through many revolutions in scientific theory and I'm sure we're not through with them yet.

You know, it's interesting, Dr. Brown, when you were talking about my expertise with flies, that I guess I'm not an evolutionist because all I've worked with is micro-evolution and that's not the real stuff. I have a couple of publications that I left back there for those of you who wish to pick up a copy, that show, I think, at least in my experience and as I observe other scientists, biologists in particular, doing what we call evolutionary biology, that they're all dealing with micro-evolution or certainly the vast majority, and it's because we're trying to do things that are useful. We're using this model in a way to hang together a lot of ideas so that we can make sense in some useful context.

That particular set of examples back there, there's a small book that when I was the President of the Texas Academy of Science, I was concerned with the fact that screwworms were undergoing an outbreak and that's a major pest in the livestock industry. So I organized a symposium to bring together a number of biologists and the Department of Agriculture staff to try to get some different ideas, scientifically based, on what might be going wrong. That didn't work out too well. It turned out that the Department of Agriculture people thought there were other explanations that made more sense to them and so a group of my colleagues and I looked at it in a different way and we found what we would call a number of different species of screwworm flies that couldn't be identified with normal morphology, so it's definitely micro-evolution using genetic techniques. That's the other paper. Many of you have come from ranching backgrounds and you'll certainly know what I'm talking about. However, it turned out that we were close enough right that when the method of biological control was changed, then there was no longer a problem with the outbreak of screwworms. This was back in the late 70s.

So you are very welcome to that. That's just an example from my experience of using science and an evolutionary structure of organizing those facts that seem to be useful. It was micro-evolution.

One of the other things that happens in using an evolutionary model to organize facts is that they change all the time and that's part of what you were showing. You see, one of the objectives of science as it seems to be perceived a lot of times, is that it's out for a truth, to find a truth, and remember, I said that is a figment of faith, an article of faith. That's not the part of science. Science is to organize and explain with approximations so the fact that it's disproven is, in fact, exactly scientific. If it were not disprovable, then we wouldn't be doing it. So as you see things that happen over and over again showing that it's wrong, that's showing that it is, in fact, scientific.

It's not very satisfying but, you see, that's the way we drive down the road. We drive with small corrections and if something unexpected comes up, we may swerve. You see, we're operating scientifically with successive approximations and sometimes we throw it all out. We don't drive the same way if we're flying an airplane as if we're driving a car or a bicycle. We use different techniques. So the connectedness of the theory is something that may or may not happen. I don't know if it will happen but it's something that we use. It's a tool. Science is a tool and it produces tools that we use from time to time. Evolution is just one of those tools.

We design the tools based on our need and our needs are based on our perception of where we're coming from. I thought screwworms had to be an important problem to work on because I grew up on a ranch. To somebody living only in an urban area, that probably would not be an important problem and they would do something different.

This is something I use in my class to show people a little bit about that. Let's do an experiment here, if you'll cooperate with me. Let's put this aisle a separating line and this aisle a separating line and this is the control group in here. Now, if I could ask you – incidentally while this is coming up, let me illustrate. Dr. Brown was kind of putting words in my mouth a few minutes ago and I have a good friend named Vine Deloria who is a Sioux Indian. He is at the University of Colorado now and he was Director of the Native American program at Tuscan, the University of Arizona. And he had invited me to join a group that was visiting from Washington and it happened to be in a restaurant that was quite noisy and so I sat down next to him with a couple of my colleagues. We had just come in out of the desert doing our work and I wasn't dressed like this, and across the table were these visitors from Washington and Vine introduced me as an evolutionist, but in the noise we later found that they thought he had said revolutionist and they were from the Bureau of Indian Affairs so they had quizzed me quite tediously for a few minutes until they finally realized that he hadn't said revolutionist and he was sitting over here just chuckling to himself. So I hope, Dr. Brown, you're chuckling to yourself here as we talk about that.

Okay, what I'd like for you to do on this experiment, let's start out that the people from this aisle here over, for the first few moments here until I tell you, look down. Don't look up here. And those over here, look up here. And those in the center, keep looking the whole time. Now then, we'll do the reverse. This group over here, look down. Don't look up here. And this group over here, look at what I'm going to show. Are you ready? And

now then, if everyone would look and the two on the outsides, if you would make a note or something like that of the approximate age of this person in this drawing, within 15 years or so. You don't have to be very accurate. Just make a note of the approximate age of that person.

Now then, let's take a show of hands. Those of you that think that person is under 30, raise your hand. Okay. Those that think that the person is over 30, raise your hand. Okay. I don't know if you can see or not, but I would say over here it's about 1 in 4 and over here it's about 80% or more and vice versa on the two.

Now what I'd like to do is show you, all of you, all three. This was the first picture that I showed, right? This was the second one that I showed. And then this was the third one that I showed. Now, in just a few seconds of priming you with one or the other, an old woman or a young woman, you will see in this picture either a young woman or an old woman. Now, some people who have seen this time after time, still when they see this for the first time, they see one or the other first and they have to kind of, it's like an Escher drawing, you kind of have to blink and see the other person.

Now to those that were opposite or those who said it one way or the other the first time, have you changed? Can you see two women here? Can you blink and see that there is both an old woman and a young woman? The old woman, this is her nose and her eye and her mouth. And the young woman is looking away from the picture. This is her jaw and her neck with a brooch. You can just barely see her eyelash and her nose looking away. Can everybody see the two women?

The point being, you see, that we see a body of evidence which all of those are just pieces of evidence and the last picture is just a piece of evidence of that drawing, and we see the evidence that more or less fits our perspective and that's the way scientists work. Now, I also teach, in fact I have a required video in my genetics class dealing with paradigm paralysis. You see, this is a watch that's an electronic watch. It was invented by the Swiss but Texas Instruments and Saco were the ones, it was unpatented. They thought it was absolutely harmless, totally harmless, it was a toy. The same way with the digital watch. They didn't even bother to patent it but Saco and Texas Instruments have now made a million, many millions out of that and there is about 60% unemployment, I'm told, among the Swiss watchmakers because they had paradigm paralysis, they could only see quality watches with a mainspring.

So, you see, our perspectives are very very different and one of the things I find interesting tonight is that I'm exposed to information, some of which I know quite well, some of which I don't, some of which is hearsay to me, but I'm exposed to that information from a different perspective. As a result, I will do science differently. You can guarantee that, that I will do science differently because I now see a little bit differently. I will still probably be called an evolutionist even though I'm doing micro-evolution. When I was teaching evolution, I used a number of creation myths and Vine Deloria as a Sioux Indian, I told you, he was always teasing me and I would say, "The evolution is this and the Sioux myth was that," and so forth. And he would say, "Wait a

minute, wait a minute, Dick, whose myth is who?" You know, I was teaching a myth, he was teaching a myth depending on how we looked at it.

The point being is that we see information differently and how we rank the information and the quality of the information depends on what we're trying to develop as a cohesive explanation and it's a human property. We have to disregard some information and include others. Now, in science we're not supposed to do that without saying what we're excluding. The exceptions prove the rule many times, that's part of our science.

Have I run over? I have. Okay, I'll quit then. I didn't want to take Steve's time. He's done his homework and I didn't do mine except to try to prepare. I'll tell you, is anybody in here in my class, had my class before? Have I got a quality control? Okay, I just don't want to be putting any inconsistent information out here unless I've changed my mind.

Mr. Bratteng. When I told somebody what I was going to be doing here, she said, "Hm, sounds like throwing a lion into a den of Daniel's." I felt this was kind of a whimsical way of expressing the idea that there is this conflict between science and religion that many people perceive in this, particularly in this debate more than perhaps anything else, and I would like to try to present the idea that this conflict is not entirely necessary.

Now, one of the problems that often occurs in debates like this is that we tend, as people we tend to take things personally and when someone attacks an idea we have, sometimes we take this as a personal attack on us. And if I seem to be doing, if I seem to be attacking you, I'm not, okay? I'm trying to keep things on the level of the scientific evidence.

Now, my personal experience with evolution may surprise some people. It was in Sunday School. Now, in high school biology, the teacher had told us there is this thing called evolution. There are a lot of books about it. If you're interested, you should read some of them. End of discussion of evolution in high school biology.

Now in Sunday school, we had a man and woman teaching our class and they presented the theory of evolution. They spent an entire session talking about the way things have happened as a scientific perspective on things and they didn't present this as, you know, your religion is wrong, this is the right thing. What they said was that, this is what scientists think has happened. This is their explanation. And we looked at Genesis, then, as rather than a specific account of what had happened as a sort of a metaphor for the relationship between man and God. Rather than trying to make a conflict there, they said, really we're talking about two different worlds here.

So my initial exposure to the idea of evolution was not one where it forced me to reject all of my religious upbringing and it's really not a conflict unless you feel for some reason that you have to make Genesis a scientific text. Now, as Dr. Brown had mentioned, we don't want to have religious writings in science classes and I would agree with all the three points that he said that scientific creationists are in favor of. However, I have a slightly different slant on some of them.

Now, most Christians that I know about don't have a problem with being both creationists and evolutionists. They see that both models are working in their view of things and, in fact, there is an organization called the ASA, I think it's the American Scientific Affiliation, which is evangelical Christians who believe that evolution is a scientific fact and are not especially threatened by this.

Now, one thing that has bothered me about thinking about these matters is that a debate is not science so if you came here to learn science, a debate is not the way to find out about science. Science really is not something that I could come up here and in a few minutes explain to you how to think scientifically. This is something that you learn over years and you learn some facts to help you support some of the ideas and many of the arguments that I've seen in creationists' works depend on slight naivete of the audience in order for them to be accepted. Many of the scientific evidences that I see, they are perhaps sometimes correct themselves but they represent a selective sampling of all the information and only those bits of evidence that support that particular view are employed and this is just not the way science works. You're stuck with all the facts.

Now, the problem that I see with the fundamentalist creationist view is that they start off with the answer. They know what answer is correct and, therefore, they know which evidence they have to accept or reject and so whether or not you accept or reject the evidence is dependent upon whether or not it supports the answer you have.

Now, some scientists may start off with the answer that they want and, you know, they are people too and they're people that are called scientists that do poor science, and there are good scientists that are occasionally human and make errors. And science is not truth, it is not everything. We don't know everything. If we knew everything, we wouldn't have science. Science is the process whereby we learn what's going on and we make a lot of mistakes and a lot of the mistakes that Dr. Brown has pointed out, yes, at one time scientists said this but the thing is that how is it that we determined these are wrong? It was by applying science, other people being better at it, or having more evidence, and that's what science is all about, it's always new evidence coming in and you have to deal with it in a systematic manner.

Now, Dick showed you pictures that, one was an old woman, a young woman, and your way of interpreting the third picture was determined by, you know, your initial experience and many scientists go into something expecting one thing or the other and will sometimes see that. The object of science, though, is to eliminate that factor so that regardless of what you feel about the subject, it's going to come out the same way every time and that 100 different people doing the same experiment will come up with the same answer. If they don't, then you have to start wondering what's going on.

Now, in the previous century, virtually all the scientists everywhere in the Western world were creationists and we had arguments about things. For instance, Charles Lyell, who was a prominent geologist and developed the idea of gradualism in geological events, was opposed strongly by other creationists who felt that there was evidence for

catastrophe. Now, there was a lot of evidence for catastrophe, the thing is that there wasn't evidence for just a single, there were catastrophes all over the place throughout geological time.

Now, Lyell's work was a strong influence on another prominent creationist, a man named Charles Darwin. In 1831 when the HMS Beagle took off around the world on his voyage with Charles Darwin as the naturalist, Charles Darwin was a creationist. In 1836 when it landed back in England, Charles Darwin was still a creationist. Now, he spent a few years looking over the specimens, the notes and things that he had taken, thinking about all of this trying to find some way to explain all of the marvelous things he had seen on this trip and that was when he became an evolutionist, taking these things and analyzing them carefully and objectively, talking to experts about things. Now the problem up to that time was not that people hadn't thought about evolution as a possibility, it's that they had not a mechanism whereby it could happen. There was no effective way of explaining the process of evolution.

Well, that's what Darwin gave us, the notion of natural selection and his book is quite spectacular in its presentation of evidence to support natural selection and I would like to read a brief passage from the conclusion of Charles Darwin's "Origin of Species."

> "There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved."

Another prominent creationist of the 19th century is worth mentioning, it's the Rev. William Buckland. He was a minister. He was also a prominent geologist. He spent 20 years of his geological career trying to do basically one thing: marshal evidence to support the existence of a single universal flood as described in Genesis. And what he actually did was provide us with evidence that there has been no single catastrophe such as that. There have been a lot of catastrophes in various places throughout the world but not a single flood that accounts for all of the things that we've seen. And he actually published this work in, I think, one of his later publications in 1840, which is about 20 years before Darwin published his work.

In the past few years, creation science has come on the scene and it's been looked at in the courts because there has been this social conflict: the people that want to have creation and evolution taught together as telling the whole story, and then the others that felt that it wasn't appropriate to teach an outdated, disproven theory along with science. And so it's gone to the courts and there is a marvelous decision written by Judge Overton on the case with the Arkansas law which mandated teaching creation and evolution. If you taught evolution, you had to teach creation as an equal, and that decision states very clearly that the thing that we're calling creation science or that you want to call creation science is really a religious dogma.

Okay, and I mentioned there are religious groups, there are scientists that have worked in this area and the legal system, all agree that there's really no debate here. Evolution is the best explanation we have for the diversity of life. You know, it's very interesting to read some of the creationists' works and see their view of things. It seems like there's a very selective use of the facts and sometimes I think that there's just a failure to understand. I'm not sure what the problem is but, you know, it's rare to have scientists debate this issue and one of the reasons that scientists won't do this is that a debate is an awful forum for presenting scientific evidence, especially if you're going to debate in front of a lay audience because many of the arguments require that, you know, you had to have had this course, this course and this course, and that way they can tell you in a relatively short time because you have already been exposed to a lot of these ideas, otherwise I would have to give you a course in general physics and thermodynamics and so on, and many many scientists don't feel competent to talk about things outside of their area of expertise.

Now, it seems, though, that some creation scientists that are trained in, say, mechanical engineering, have no qualms about asserting expertise in, oh, thermodynamics, geology, paleontology, biochemistry, microbiology, zoology, and just about any ology you want. They talk very authoritatively about these things but sounding authoritative is not the same thing as being an authority.

I'm going to skip through some of my stuff here because it looks like I'm running out of time. I want to deal with some of the science, some of the evidence that's involved in this controversy and I would like to make one thing clear at the outset, is that scientists, evolutionary scientists, cosmologists, see things very differently than creation scientists in one particular regard: the creation scientist sees a creation event as being responsible for both the origin of life and the diversity of life, whereas the evolutionist sees there is a process of evolution but it just says really nothing about the initial start-up of the universe, of life itself; that these are really two separate things and that we can marshal pretty good evidence for the fact of evolution. Now, I say the fact of evolution. It's among people that have studied this carefully, it is clear that evolution is simply an observation. Now so it has this factual kind of evolution has occurred unless there was a miracle, okay? You see, we have no way of proving scientifically that we didn't start our existence five minutes ago or ten seconds ago and we were created instantaneously with a full memory of something that never happened. There is no way science can deal with that question. That is a miraculous event. That's outside of science. Okay, so looking at the evidence, it's clear that evolution has occurred.

Now, the theory of evolution at this point, it consists of two major components. One is the methods whereby evolution occurs, the various mechanical things that allow things to change. The other aspect is the exact pathway that has been followed through history, you know, during evolution. So the theory of evolution is really how it has happened, not whether or not it has happened and this is where evolutionary scientists are arguing.

Okay, now, some of the arguments have from the creationist's point of view, implied that the earth is very young and I want to point out some things that are very difficult to explain with the creationist young earth model, but which do fit into the notion that the

earth has been around for several millions of years. One is that when you look at strata, sometimes a particular stratum, when you analyze the contents of it, it's clear that it had been a desert; that that was desert dunes. You find various features of the way the sand that composes the sandstone is formed, that everything about this says desert. This is hard to explain in light of a flood. Most deserts don't exist under billions of tons of water. A good example of this type of fossil desert is what is called the Old Red Sandstone.

Also, one finds fossil mud cracks, cracks that formed as mud dries up and, you know, these are things that are in the middle of a lot of sedimentation. It's puzzling to many people how one could have mud drying up at the bottom of a flood.

Then, footprints. At various points throughout the geological record, there are footprints. Now, the creation account implies that all of the sedimentation and stuff that we see, for instance in the mile thick layer at the Grand Canyon, occurred in the year of Noah's flood. If this is true, then we're having a rate of deposit of sediment at about half an inch a second for a year. Think about this: just the problem of how you're going to have something walking around on the bottom of the ocean making footprints is curious enough but then how you could actually have a series of footprints, if something takes its time and it takes more than a few seconds to get from here to over there, the footprints are going to be in different strata because this stuff is always always filling up. So they start off over here, the bottom is here. When they get over there, it's at that high. It's a very curious thing. It's hard to explain in terms of a flood situation.

There is a place in Wyoming in the Yellowstone National Park called Specimen Ridge and it's a mountain that part of it has eroded away and it has forests, fossilized forests, 27 of them. There is a forest, it's volcanic action occurred, killed the forest, buried it, say this deep, everything above that seems to have rotted away. Then soil formation occurred. A new forest then began and grew. Another incident of volcanic eruption killed that forest. This happened 27 times. It's hard to explain this in terms of a flood going on.

Now, I've heard it explained, "Well, these were just, you know, trees that just fell down there and stacked up." The problem with that is that they have root systems so you have these root systems and maybe they got torn up. Okay, well, another thing that's been looked at, maybe you know about tree rings. As trees grow in any particular area, they develop a similar pattern of thick and thin rings that are very useful in figuring out how long something has grown and matching it up and we can actually go back in time and have a continuous record of tree rings back to, oh, about 14,000 years. But what they did was they looked at the tree ring patterns of these. Now, if these were all growing at the same time, they would all have the same patterns but each different layer has its own distinct pattern making it quite clear that they were growing at different times under different conditions.

There are coral reefs. There is a fossil coral reef 1,300 meters thick. Now, coral reefs under the best, coral animals under the best conditions, add on to their reef at about one centimeter a year so this means that even going at one of the better rates, this is about 138,000 years for this particular thing to have grown and that's ignoring the erosional

gaps. Apparently this thing, there is volcanic kind of raising and lowering of this reef so that at various times during the growth of this reef, there was erosion going on. In other words, they were exposed and there was no growth going on and then it got re-submerged at the appropriate level.

Another thing, another feature of geology that's hard to explain given the one year of Noah's flood is a thing called varves. Now, these are alternating layers of sediment, very thin layers that seem to be correlated to yearly changes in the climate. As things happen, you know, at one time of the year a certain type of sediment is laid down, later in the year, a different type is, and we see a shale that is 600 meters thick that has what appear to be 5-8 million years worth of deposition. It's hard to explain that in a single year, especially since we're dealing with extremely small particles that in the turbulent conditions of a single year's flood would not deposit. Very small clays and things take a long time of undisturbed conditions in order to settle out.

There are a couple of other points that I think are useful in trying to visualize a flood of this sort. One is the so-called fossils out of order. Now, these are not that hard to explain when you understand that various regions get subducted, they get flipped over, you have bends like this and things get folded over on top of one another, but it's even harder to explain this in a flood. How do you get footprints being formed upside down in a flood? It's extremely difficult to explain that under those conditions.

Also, there was some mention of the second law of thermodynamics and I'm always amazed that people can use this second law of thermodynamics. The way that it's applied saying that the complexity in evolution could not have occurred, is analogous, exactly analogous to saying that your refrigerator cannot make ice cubes and I don't think we have to worry about the physics police coming out and confiscating any appliances for breaking the second law of thermodynamics.

If you would like to find out the real science behind a lot this creation claims, there are several good books about this and one of the best, which has virtually every argument explained from the creationist's perspective and then giving the scientific explanation behind it, it's Arthur Strahler's book "Science and Earth History." And I checked this out at UT from the undergraduate library and most of the things that Dr. Brown has mentioned have been dealt with quite thoroughly in this book. Obviously in 40 minutes I'm not going to be able to read much of this.

And I'm told that time is up. So thank you.

Speaker. Okay, thank you very much, Mr. Bratteng and Dr. Richardson. During this portion of the debate during the dialogue section, again the rule on religion remains in effect which is that you cannot use religious writings or doctrines to support a scientific claim nor can you ridicule a religious belief. There is another set of rules that is going to be taking place here that, again, you won't necessarily know are going on but I'll just kind of explain it to you so you can have a better understanding of how it works.

Each side can speak for two minutes uninterrupted. So if Dr. Richardson starts speaking, Dr. Brown cannot interrupt him for two minutes at any given point in the process. If somebody interrupts before the two minutes are up, they lose a minute and the other side gains a minute, so that as we go through despite the fact that it's 34 minutes and 25 minutes, that may change as we go through this process. The computer that controls everything up here, it displays it for the speakers so they know how much time they have left and at the end, one or the other side will probably have a few more minutes to wrap up than the other side might. We're not trying to be unfair, we're just trying to follow the rules. Everybody kind of follow me? Alright, kind of, maybe. That's alright. We know what we're doing up here so, hopefully.

At this point, I will turn it over to the debaters. Since Dr. Brown started first, Dr. Richardson and Mr. Bratteng can go first in this half.

Mr. Bratteng. Well, I did neglect to mention about 85% of the stuff that I have but what I would like to do is find out what the creationist's explanation for some things is. For instance, the Specimen Ridge having 27 forests, one on top of the other. What is the way of dealing with what seems to be something that would require thousands and thousands of years?

Mr. Brown. I was frankly, very surprised that you brought that up. This was a very common argument that was used, oh, 8 or 9 years ago but every since Mount St. Helens erupted, I believe it was 1981, evolutionists, I've never heard them bring it up anymore because what was discovered there and what has been published and there's even a videotape that Dr. Steve Austin at the Institute for Creation Research has put together, he has seen when Spirit Lake, when that eruption took place on Mount St. Helens, Spirit Lake sloshed up the side of the hill, down came all these trees. Steve went back months later, sat there on the bank, watched these trees, a floating mass, the wind would blow one way and they would all stack up on one side of the lake; the wind would change, they all would go back the other. And all of a sudden he was eating his lunch and the tree went vertical and he watched it a little more, a few minutes later it sunk. Then another tree did the same thing.

So he went back, he and some people from the Geoscience Research Institute in California, went back, got some scuba diving gear, went down, got some equipment, a rowboat and bounced sound waves, and there they found all these trees stacked up just the way it is in Specimen Ridge. How long did it take? Were there 21 complete forests growing? Nope, it took a matter of days. And since then, I've never heard evolutionists bring it up.

Mr. Bratteng. Can I respond to that? Well, the thing about Specimen Ridge that differs from what happened there is that it's clearly a matter of different forests as I mentioned about the tree rings, that tree ring analysis pretty well gives you a profile and that all of the trees in the area of Mount St. Helens would have a single pattern of tree rings. Now, if a similar thing happened to make Specimen Ridge, one would expect all of the tree ring data to be the same through all 27 layers and it isn't. That is a fundamental problem of

how you can say that this is the same event, same sort of thing going on because the different profiles of tree rings just by itself is pretty conclusive. How do you deal with that?

Dr. Brown. I believe your data is wrong. I believe that Dr. Harold Coffin at the Geoscience Research Institute has found that the tree ring patterns at Specimen Ridge correspond even though they are at different levels.

Mr. Bratteng. Well, I guess we can look this up but that's not the case. How does the creationist view using a single year flood deal with the matter of 5-8 million years of varves in the Green River shale?

Dr. Brown. Show me why you think each of those layers was laid down in one year?

Mr. Bratteng. Because there are current cases of lakes in which this process is going on and you can look at, analyze the different layers of each of the varves and you can see that you have now being laid down at one time of the year carbonaceous sediment, at another part of the year you have darker organic materials which includes pollen and spores and that these are formed each year as the seasons change and you can then follow this back and find similar things going on in the varve situation. That's how I explain it.

Speaker. You wanted to wait six seconds.

Dr. Brown. No, I dispute very strongly that those are annual varves. Each of those layers is annual. Yes, there are layers being laid down at the bottom of lakes annually, you can see a pattern, but the similarity is quite different. For one thing, we can go to many places on the earth, trace a layer of conformable, that's the word, conformable layers, parallel layers, and where you see parallel layers conformably laid down, you've got to conclude they were laid down continuously. But we can trace from the very top of the earth's sediment all the way down to basement crystalline rock, all the way down, so consequently even though sometimes we might have to go laterally for several miles, consequently we've got to say that the entire sedimentary crust was laid down rapidly like during a global flood.

Here you mentioned deserts, deserts can't form at the bottom of a flood. Well, I'll buy that, that's obvious, but what he's referring to is cross-bedded sandstone. This is cross-bedded sandstone. Do you see the layers are this way and maybe above it there tipped the other way? And the evolutionists have said, "Well, that's an ancient desert because it looks like a sand dune." Well, here's one that I'm standing in front of where you see the angles of these cross-bedded layers, you see them very very steep like 70 degrees here. How steeply does sand stack up on sand dunes? The angle of repose of sand is somewhere between 31 and 32 degrees. How could you ever get sand being that vertical? I say it's got to be wet. Furthermore, how do you get such uniform hardness throughout it? This is part of the Coconino sandstone that can be traced from eastern Arizona clear into the Grand Canyon. The hardness is uniform. You take a layer of sand 500 feet thick and you cement it uniformly and I'll concede the debate to you.

Mr. Bratteng. Okay, fine. Thanks. Well, the thing is that you're saying that you don't believe the data that support the 5-8 million years for the varves, I mean, that's an opinion and the thing is not all opinions have equal weight; that there is really no evidence to support your opinion that these are not basically annual events. And in fact, the man that did the work on this initially and this was published in 1929, so there have been, perhaps, some data points added since then, but basically the story is very similar and he found that there are cycles of thickness. There is one cycle that corresponds to sunspot cycles. There was about an 11 ½ year cycle. There was a 50 year cycle that he couldn't explain. And then there was a I think it was 12,000 year cycle which seems to correlate to the precession of the equinox. So the fact that there were these correlations related to independent time events lends some support to the notion that these were annual occurrences, they switch back and forth, and also leaves unanswered the question of how extremely fine sediment can settle out during turbulent conditions. All the shales are composed of extremely minute particles and it takes a long period of non-turbulent conditions for these clay particles to actually sediment. If there is any kind of movement, which one would expect if you had all these flooding and things going on all over the place, it would be hard to explain how 600 meters worth of clay particles were able to settle out in a single year.

Dr. Brown. Who said they settled out? I certainly don't.

Mr. Bratteng. Well, how did they get there?

Dr. Brown. Well, if you were here, I spoke about a topic called liquefaction. I explained how that would happen.

Mr. Bratteng. Did you provide evidence for that?

Dr. Brown. Did I what?

Mr. Bratteng. Provide any evidence to support that idea?

Dr. Brown. I did. How many heard it that were here? Tonight I invited you to come, not tonight, this afternoon. It was there and going back to your Green River shale, there are places where catfish are found, here are these so-called varves, very thin layers that Steve Bratteng says were laid down, each layer one year or maybe six months, and yet catfish span many of those layers. Now, a catfish is going to decay in a year's time. So there are many things like that that don't fit your interpretation that each of those layers is one year.

Can you give me, either of you, any example of where macro-evolution has ever been observed? Macro-evolution.

Mr. Bratteng. I have not personally observed it and macro-evolution is something that doesn't occur that readily that we're going to see it. We have enough trouble just observing micro-evolution going on, we're talking about time frames that are outside of

human experience. And also, evolution doesn't happen in this kind of ongoing process the way you're trying to make it out to be, that it's a continual change going on. The evolutionary pattern seems to be that when conditions are stable and organisms are doing alright, there's not particular change going on, that you have periods of long stasis, no change and that environmental conditions seem to bring about extinctions and environmental changes that are providing niches for things to move into and evolution occurs relatively rapidly in that time.

Dr. Richardson. One thing that's just now coming into the genetic evidence is that there are complexes of genes that are found in many different kinds of organisms, insects to man, that are not expressed in humans. For example, they would be the type of genes that are involved in the development of, say, wings or legs or antennae in the insects. We don't know what this means yet but they are complexes of genes that are there or seem to be there based on the DNA sequences, they are labeling those. I don't know what that will mean but maybe that shows a potential for macro-evolution. We don't know what it means yet.

Speaker. You wanted to wait six seconds.

Dr. Brown. Well, if you can't give us any examples of where macro-evolution has been observed, then what makes you think it ever happened? Answer if you can.

Mr. Bratteng. Is that a question?

Dr. Brown. Yeah, go ahead.

Mr. Bratteng. Well, the notion that one has to observe something for it to be a scientific fact is not correct. Who here has observed an atom? We're saying that the evolution model is so far the best way of dealing with all of the facts that are found in the world. The atomic model is the best for dealing with the evidence that matter is composed of these rather small dense bodies with a lot of nothing in between, this isn't because we've seen atoms, it's because the data that we have can only really be explained effectively by that model and the same is true with the data that we see about the diversity of things and including macro-evolution. The fact that clearly the geological record is quite good and consistent despite what you seem to think, that there is clear, strong, compelling evidence that at one time there were vastly different kinds of plants and animals that are no longer found and one would expect that if you had a mixture of all kinds of animals and they sorted out that you would occasionally have a retarded giraffe or something that could not outswim a marine plesiosaur or something like that and would end up at the bottom of your sediments and perhaps some of these aquatic dinosaur things would swim around for a while and not ended up buried until much later and this simply doesn't happen.

Dr. Richardson. You might remember that probably atoms are wrong too as a model. That will change.

Dr. Brown. The reason I'm pausing is Dr. Richardson wanted a six second break before I could jump in. You have said that you see lots of extinctions. You have said that you don't see any examples of macro-evolution but that that's the best model. Science should be based upon what is seen. I disagree very strongly with you. I think most scientists would disagree with you. Science has got to be based on what's observed and by saying that because it's the best model we're only going to entertain that, you are automatically censoring anything that contradicts that model and we don't like that. We don't like our children being taught something that we don't think is sound scientifically. And you know and I know that if a creationist, I don't care how good their credentials are, tried to get a teaching position in most secular schools and many Christian schools, they wouldn't get it. They would be rejected.

There is an inbreeding process going on here. We all probably have heard of Forrest Mims getting ready to be hired by Scientific America, learned he was a creationist. Whoops, you can't be on here, on our staff anymore because you're a creationist. There is that type of bias going on and we don't like it. Most people don't like it. 85% of the American public even on polls conducted by evolutionist organizations want these scientific evidences brought into the classroom. Why isn't it? I think there's a real bias going on here and we're starting to get a little upset about it.

Dr. Richardson. I agree with you. In fact, I would carry that even further. There is a similar bias in many areas besides just biology, even in the way that the school classroom is organized. We're going through this at the present time. There are many camps but simplistically you can put it into those who want to have hard control and have a lot of memorization and facts, and those who want to encourage free thinking. The ones in control are the industrial type people, as a rule, if I can categorize it and it's really not fair. But I agree with you. I do not like that either. I am actively working to open up the free thought and examine whatever evidence it is and let the chips fall where they are and let them keep shuffling. I think that's part of the joy of an intellectual activity is to examine different ways of looking at it.

Dr. Brown. Well, I applaud that, Dick, and I haven't heard too many evolutionists take that approach. You probably haven't either.

Dr. Richardson. No.

Dr. Brown. And we've got to do something to stop it and I don't know what it's going to take. You probably have colleagues that would blackball me if I wanted to teach even in the mechanical engineering department. I'll bet that I'd have a tough time getting hired. I don't want to but... And when creationists try to get papers, scientific papers, published and I have seen very fine scientific papers talking about revolutionary things where there is solid data, great scholarship, send it off to very prestigious journals, I've seen the letters of rejection come back. They don't talk about any reasons. They say, "We suggest you go to someplace else." Now what would happen if those were published, I suspect, is the advertisers in those journals and the subscribers would start to scream that you're letting

these people that aren't scientific publish and we just can't get a hearing scientifically. That's why we have these debates.

Steve, you said a little while ago that a debate is not science. Well, I certainly agree with that but scientists do debate. Scientists are arguing all the time. You go into a laboratory and if you can't find certain camps advocating one little idea versus another, why, nothing very exciting is happening there. So a debate is not science but scientists debate and it's a very healthy thing but what is happening to shut off the debate is creationists are having the door slammed in their face. Students aren't getting all the evidence. They are told what to think and they're not told how to think.

Dr. Richardson. I think it's even beyond creationists. I think there is a fear to examine different kinds of ideas. I find this in the work that I've done with a number of different areas. Holistic resource management, that's a buzzword for an organization I work with in agriculture. It's unfortunate but it's not considered to work by most of the people at the Land Grant schools. I'm a graduate of three degrees from Land Grant schools. However it works and the people in the field such as yourself out here who pay the bills, know it works. So this is not just unique to creation perspectives of looking at evidence. I think it's a general problem of people not wanting to have their intellectual boat rocked and I enjoy my boat rocking, frankly. I like the whitewater.

Mr. Bratteng. One of the things you mentioned earlier was that you're not happy with the situation that certain science is not taught. Well, if it were true that the kinds of evidences that you were presenting really represented a scientific perspective, there wouldn't be any problem. That's where the problem is, is that you are very selective in the evidence that you employ to do things and typically it's not by finding something that will support the notion of creation, it's by finding problems with evolution. People that are working in evolution, which is actually a very small number of people, most people are not actively engaged in doing evolution, they don't work by attacking the creationist model, they work by providing evidence for something and that is what seems to be lacking in virtually all of the creation science that I've seen.

Dr. Brown. Well, I laid out here this morning a theory called the hydroplate theory. Do you have any objections to it? I sent it to you.

Mr. Bratteng. The hydroplate theory reminds me of some work that Baumgardner did. Is this somehow related to his work? Well, I'm not in a position to interpret the hydroplate theory, frankly. It's not something that I have any expertise in. The fact that I don't know it doesn't mean that I couldn't find a geologist or a mechanical engineer that might explain it to me. I simply don't know anything about it. It's not something that, for one thing, seems very plausible and, you know, if it's at all related to the work by Baumgardner, it required assumptions of the viscosity change of about a factor of one billion in order for these kinds of things to take place and it just seemed unrealistic.

Dr. Brown. Now wait a minute, you said a few minutes ago that creationists are always attacking evolution, they're not laying out their models so it can be attacked, and I just

showed you I have laid out a model not at all related to John Baumgardner's work. I agree, he's got a terrible viscosity problem. Terrible. But here I've laid one out and you say, "Well, others could probably critique it," why can't you? You'll say, "Well, I'm not a mechanical engineer," and yet you'll tell me because I'm a mechanical engineer I'm not qualified to get into a geology area or a biology area.

Mr. Bratteng. Right. And you've consistently shown this business about all this varve business and all this, you really have never answered the question of how you can explain in this one year a settling out of these things and of the sediment in general, of being at least a mile thick, how you can have that much matter suspended in water and it's just mind-boggling, really, how this could relate to anything in the real world. Do you feel like perhaps these things did not sediment? I don't know.

Dr. Brown. Well, I spent about 15 or 20 minutes here this afternoon going through that explanation and I can't do it here again for you, but if your mind is closed to where you're not willing to look at this explanation, then I can't help you. These people who are here know that I'm saying that those clays didn't settle out and that produced the sorting. They were dumped. Liquefaction occurred on a wholesale scale, 12 hours and 25 minutes of every completed a cycle. That sorting took place very quickly. That same sorting sorted out dead animals and plants, sorted them out in the evolutionary order. A fossil, sure typically are below B. B is typically below C. Sure. There are exceptions, though. It's typical, it's not absolute as evolution would require. In the United States alone, in North America alone there are 120 locations where the evolutionary sequence is inverted. It shouldn't be that way.

So there is a general sorting and I went through and explained, I wish you had been here, how A and B were separated from each other. A didn't turn into B. That would require macro-evolution besides and we have no...I haven't the foggiest idea how that could ever occur. Could either of you tell me how sexual reproduction evolved?

Dr. Richardson. Let me make another comment before we get to that and I'll try something about that. I've dumped lime in stock tanks that had a lot of clay suspended and settled it out. I don't know what you were referring to that I missed this afternoon. I had planned to come but I had something else that came up, and so I don't think and I hope that you're not implying that somehow or other we're remiss and we're not conversant with that tonight but the fact is, I'd like to look a little more at that at another time. We're not settling anything about that tonight, though.

In terms of sexual evolution, there are organism that become asexual or sexual with a simple gene switch, in fact, even with an environmental change. The structures may change, the male and female structures may change and an organism be part of its life a male and part of its life a female. There are organisms if you move all the way down to the fungi, that we often them rated as different species if they are in a sexual form or if they're in an asexual form until we clear up the taxonomy and sometimes it takes a long time because they look quite different. So I don't see within the developmental biology that looks so different to us when we look at the finished product of male and female, the

vast difference that you would see through the developmental process as male and female humans are very similar until fairly late in the embryonic development. It's possible to have a hermaphrodite in humans. They're sterile. So there are intermediates within the development. We normally see them as abnormalities.

Dr. Brown. I certainly agree. There are forms of life that can take on the male role and organisms that can later become female, but what that means, that means there's an even worse problem because built into that genetic material must be all the information that allows it to be a male sometimes, and there must also be even more information that allows it to change gender. I'm asking the question: how do you get all that information there to start with? And it's got to be vast. Look around, people here know how complex male and female humans are, that's common knowledge. Now how do you build up all that tremendous complexity?

And the apes have quite a different reproductive system than the humans. Quite different. There is a story that goes around that evolutionists tell and other evolutionists hear it and repeat it and it's one of these things that just keeps going and you can't stamp it out, even though it's dead wrong.

Dr. Richardson. But it comes back – you can interrupt. I'll just comment a couple there about how we got that information. I have no idea. That's not even in the realm of good theory, good speculation in evolutionary biology. However, the thing I mentioned a few minutes ago about the regulator genes and the whole spectrum of genes that have been turning up as we've gotten better molecular probes, I think are going to raise a tremendous number of new questions that we have no idea how the chips will fall.

It's extremely interesting to me that the things that we thought were sacrosanct from exchange of genetic information such as among species, is not nearly as isolated as it might be. We share viruses with other organisms and those viruses can bring in genes from the other organisms. I don't know when we're going to have chlorophyll genes show in our genome but it wouldn't surprise me if we didn't actually have, you know, shared genes of that sort that we now consider in the domain of plants. I think it's an extremely exciting time in biology and if it comes down that creation is the best explanation, I'll have no problem whatsoever with that. In the meantime, it's an open question.

Dr. Brown. I now remembered what I meant to say. The statements come up so many times that there is 99% correspondence between apes and humans. What that's based upon is a few proteins that have been examined that are common between them in which there is a 99% correspondence but that's not the whole thing. I just mentioned the sexual differences. Think of the linguistic differences that must be in the brain. Think of the rest of the differences in the brain. Immense, so this old story that just keeps going on and on that apes and humans have 99% correspondence is wrong.

Steve Bratteng or one of you were commenting about this is the way science works, it's fairly close-minded. There is a very classic book written on the history of science by Kuhn. I presume you're familiar basically with the thesis if you haven't read the book, it's

called "The Structure of Scientific Revolutions," and what it points out is that theories, and really the word he uses is "paradigms," it's a very global way of looking at things, paradigms have a life of their own. Professors teach it. Students learn it. The best students come back and become the next generation of teachers. Pretty soon anomalies start to crop up. You see that this paradigm doesn't quite fit, maybe the earth really isn't flat. We see ships sinking on the horizon, we see solar eclipses, lunar eclipses, so we start to say, "Well, maybe that paradigm isn't correct." But still the academic establishment is in control. They're not going to hire anybody that's coming and saying the earth is round, not flat, and so pretty soon the amount of anomalies become so enormous that that paradigm is thrown out. It's a revolution. I think we're having that happening in this origins issue because the people with the opposite point of view are not allowed to get their word in, in the schools that the taxpayers are financing, and yet 85% of the taxpayers are wanting this information in.

Dr. Richardson. Well, I agree we're definitely in a time of change, we're in a time of change, I think, that we're beginning to not look at things quite so mechanistically and reductionistically. You see, that dates back to Aristotle but it really got into its own with the industrial revolution where human beings were the ecosystem and always considered just a gigantically complex machine and you could pull out a spare part and stick it in where it wasn't working right. That's not true. We're learning now that when you change anything, what we say tonight, in fact, has manifold effects; the ripples extend throughout the whole system. That's a paradigm shift that's, I think, beginning to happen in biology.

Chaos theory is something that seemed to really upset a lot of what we thought was happening in an organized, slowly changing system but in certain cases of chaos theory, a very small, not even very accurate, regular pulse creates a pattern following, tracking that pulse throughout the whole thing. This could be easily a new paradigm in the way that we get order coming out. It could be, in fact, even what one might call a spiritual aspect of the paradigm. I don't know but these are the things that, to me, are exciting. If you have the answer already, then you don't like to examine the alternatives. I don't have an answer and I like to examine as many alternatives as possible. It's just overwhelming with a good group such as this, which gives me a whole different perspective to talk about some of the things that will change. And that's what I was talking about earlier tonight, this is a very good forum to look at things a different way.

Dr. Brown. Steve Bratteng mentioned in his prepared remarks how tree ring data allows you to link together different pieces of wood where the tree ring patterns are the same that stretches out 14,000 years. I don't think that's the case at all. These are so-called long chronologies. The oldest tree growing, Bristlecone pine in the White Mountains of California, has 4,600 rings. That's the oldest one called the Methuselah Tree. They don't use that in this long chronology and when you examine how they developed these long chronologies, I see some things that aren't very rigorous. First of all, they say certain rings are missing and they cannot allow it to overlap. They'll take a sequence of rings that match another piece of wood and they'll say, "Okay, they overlap and that allows us to have a longer sequence." But what they do when they find an old piece of wood, they first radiocarbon date it and then look and see and if it's old, then they see, "Maybe we

can extend the long chronology, and if we can, we'll publish a paper, our laboratory," such as the dendrochronology laboratory at the University of Arizona, the biggest one around, "then we will have the longest chronology. We will get the research dollars when archaeologists want to have something dated by tree rings." And yet they refuse, and I have sat with the Director of that laboratory for half a day asking him, "Why won't you let a statistical analysis be done to see if there truly is an overlap?" I happen to know from a person who has worked in that lab, that they do do what I would consider circular reasoning. They do radiocarbon date the slab of wood before they see if they can find a fit. And they do let the human eye and judgment decide is it a fit. Far better to do it statistically. And a friend of mine has even sent them a computer program to say, "Well, if you're not going to release the data to us, then please run this computer program. It will tell you how much confidence you have that there is a fit that allows that long 14,000 year chronology." They haven't done it.

Ferguson, who died about four years ago, he kept his tree ring raw wood locked in a safe and at a conference of dendrochronologists, they asked, "Can we see your wood?" And he said, "No, I'm afraid creationists will get ahold of it." That's close-minded.

Dr. Richardson. That says protecting your turf. One of the things that I do disagree with you right now on, is that I think that a trained eye is much more sensitive to picking up patterns than any computer program that I've ever worked with. I did some computer analysis for looking at photographs and looking at chromosome banding patterns. It's very difficult for a computer to tell in a frontal view that it's been trained on, how to interpret and find the eyes if it's slightly oblique view. It's trivial for us to figure that out. And so I think statistics is something that, in fact, is one of the narrow minded points of science these days, that is, it has its place. My Ph.D. is in statistics but the most powerful course I had in statistics was called "The Analysis of Messy Data," and what we did was to learn how to analyze things that, in fact, didn't fit the usual assumptions or the statistical model, but I challenge you to publish a paper in science today without having some statistically analysis. That's part of the dogma of science and it's used as, I think you might infer, as an attack on the kind of data that you might have. It's anecdotal data but I think it contains important information and then carry it on from there maybe with experiments, maybe not, it depends on the area that you're working with.

Dr. Brown. Steve Bratteng in his presentation mentioned corals. At Enewetak, which is probably what he was referring to, there is a depth of corals. You can drill down 1,300 meters. That's true. That really presents a problem because corals don't grow deeply. They drown if they get too deep. They don't get enough sunlight. They don't grow either if they're too close to the wave action. They'll get destroyed. So there is an optimum depth. Corals can, many people who were in here heard me talk about how sea level was much lower after the flood and sea level rose. So that's why we have corals down 1,300 meters below today's sea level and as the sea level rose over the centuries, those corals grew.

The problem with measuring coral growth rates, and you've quoted a figure that was quite small, is that the easy way to measure coral growth rates is to measure it in ponds, pools,

lagoons, what have you, where it's easy to observe it, but there is an optimum depth at which it grows the fastest and when you get corals growing at the optimum depth, the record growth rate is 4/10ths of a meter per year, and at that growth rate, you can account for this 1,300 meter depth of corals under Enewetak in easily less time than it's been since the flood.

Mr. Bratteng. Well, it's hard to deal with data that has been so thoroughly cooked that it just doesn't pass muster with anything that we know. I mean, I don't know how to deal with things that are...it seems like you make up some of these things as you go along because, you know, reading in journals about these things, you know, it's a very different picture. You know, we're looking at coral reefs that are growing at, if you assume close to optimal growth rate, most corals and this particular type of coral, one centimeter a year is about as well as it does wherever it's growing and however high it is. It doesn't do as well as that in some cases, so what we're looking at is the minimum age and it clearly grew faster than that.

Now, there was one thing that you said earlier that I didn't get to mention, to comment on, and that was that about the feelings about being excluded, certain views being excluded, that you felt this wasn't fair and that a lot of people would opt to have things done differently and I would agree there probably are some things that should be done differently in the way science is taught, and I think part of this is due to arrogance of scientists who are people, and also it's due to the fact that many times the teachers are not well trained enough to understand these things to explain them thoroughly and so they just kind of parrot what they think the situation is, and that's an unfortunate situation. The point I would like to make is that science is not conducted by an opinion poll. The fact that it bothers you that things turn out a certain way is really irrelevant. If you looked at people in an airplane that was about to crash, I bet you all of them would vote to suspend the law of gravity and what good does it do them? I mean, wanting nature to be different than it is, is pointless. I mean, the fact that you don't like the answers that you get...

Dr. Brown. I'm not complaining about not liking the answers, I'm complaining about the data not coming in. I'm complaining about you not knowing about coral growth rates that are published at 4/10ths of a meter per year.

Mr. Bratteng. It's not the same coral that is fossilized in the reef that I'm talking about. I mean, there are different kinds of corals, species of corals, and they all have different form and they have different characteristic growth rates and this is somehow getting lost in the shuffle.

Dr. Brown. All I'm saying is there are published reports of coral growth rates. I don't know if they match the Enewetak species or not. I could certainly look into it and find out. If you were prepared to get this brought into the textbooks if it was consistent with the theme I'm making, I'd be happy to dig into it and find out. But there are published reports of coral growth rates of 4/10ths of a meter per year and I'll give you the references.

Now, Arthur Strahler, I've read that book. I mean, he is misrepresenting what creationists are saying all the time and that's why I have advocated and maybe you've heard, I suppose you've checked with some evolutionist organizations about some of the things I do when I'm in a situation like this. I think we need in order to have sanity brought to this issue, we need to have responsible people on both sides of this issue be willing to put their evidence supporting their view down in writing and let the others rebut.

And, Dick, frankly I'm very impressed with you, the openness you have. You're unusual and U of T is fortunate to have you. But what I would like to see you and a group of people that are willing to address this origins issue in a fair manner, why don't we put our evidences down in writing? Let's take turns traveling to each other's office before each submission and take turns rebutting. Again, stay away from religion. Let's show people that this issue can be dealt with without getting into religious matters. The evolutionist community and the media put across on the public, no, what the creationists are talking about is religion and what they, the evolutionists are talking about, is science. I even heard you say something along that line, Steve, and that's not true.

We're talking evidence and so what I'd like to see is both sides put their case in writing, exchange it and go through umpires such as we have here, and let's publish it. It would be a bestseller. I have had a President of a large publishing house say, "Walt, give me the first chance at that if you ever find an evolutionist willing to enter into a written debate." And you can get as many people to work with you, you can get the whole UT faculty as far as I'm concerned. Would you be willing to do that, Dick, to organize something like that?

Dr. Richardson. I don't want to use the minute and 21 seconds left. I'll talk to you at length afterwards.

Dr. Brown. Here's what we set out to do and one criticism I have, Dick, is I didn't hear you present any evidence. None. Now you presented some things about sand dunes being, this cross-bedded sandstone being sand dunes and these varves are somehow supposedly one year in length and these corals that are so deep and they only grow very slowly, all of which I think is wrong.

Back to the sand dunes, one more thing I meant to mention there and I didn't mention very clearly. Let me clean up one thing. If you go to the Coconino sandstone, this is supposedly an ancient desert, it's one of the formations in the Grand Canyon. It's the very white cliff forming rock that you see when you stand on the rim. There it's typically 300 feet. I can trace it clear to the New Mexico border and find places where it's 600 feet thick. This is cross-bedded sandstone. This is their desert. Frankly, I have never seen a desert sand build up to be 600 feet thick. The deepest sand I've ever seen on the earth, or heard of, is at the Sahara and that's only 500 feet thick and I haven't been hunting for the thickest cross-bedded sandstone but something unusual happened to lay that down. I mentioned that the cross-bedded sandstone, the angle of repose is so steep that dry sand on a desert wouldn't stack up that steeply. It's got to be wet to stack up that steeply. And

if you hit that rock with a hammer, you're going to find it's of uniform hardness no matter where you hit it.

Now if you were to take a big pile of sand in your backyard and I give you all the cement you want and tell you to mix it so you get uniform hardness, you couldn't get it very uniformly mixed so that you had uniform hardness. You'd have clusters of too much cement and too little. But yet if these particles, these sand particles, were sorted out, and liquefaction is the way they were sorted out, but the water of the flood contained this calcium carbonate dissolved in solution, then you have a uniform mixing of the cementing agent, calcium carbonate, in between all the particles and so you will get a uniform hardness. Can you see the point I'm making? The reason we get uniform hardness is not because it was a sand dune, you take dry sand and take all the cement I want, you're not going to get uniform hardness. But if the sand is laid down in a solution in the floodwaters where dissolve is the cementing agent, because it's dissolved, it's absolutely uniform, you're going to get the uniform hardness which is what we see.

So all of this says that your desert, Steve, that you said doesn't form under water, that's a truism, I'd buy that, when you look at it more closely, it's exactly what one would expect of a flood. It's not a sand dune. It wasn't a desert. In fact, we see footprints of amphibians in there. Amphibians don't live in deserts.

Mr. Bratteng. That's a new one. I mean, I've seen toads in the desert, actually. So I don't know where you get that amphibians don't live in the desert.

One point I'd like to make is that in this debate, obviously you have pat answers for everything and what I would like is that if people really somehow think that there is some scientific evidence behind what you're saying, if they would take your book, take a look at that, and then look at Strahler's book or any one of about a dozen other books that deal with the creation/evolution controversy from an evolution point of view, Dealing with the kinds of objections you've raised, you know, I would like to see them just deal with it in that manner rather than...because you can make fun of something I said, people say, "Oh well, that's ridiculous that this could happen that way." Yeah, yeah, you can make me sound ridiculous but that doesn't make you right.

Mr. Brown. Arthur Strahler, I'm sure knows that I have asked him, I didn't ask him in a direct letter to him, but I asked him in a publication, the same one you've got in your briefcase there, would he be willing to enter into a written debate on this. I've not heard from him. He knows I'm interested in doing it. He knows that he is certainly a good spokesman for the other side. He certainly studied it. He has certainly misrepresented me in that book. He didn't dwell on it too much but he said some things that were just completely in error. Strahler will not enter into this written debate. So I think the evolutionists are just close-minded, frankly.

Your time is up or almost up. You've got ten seconds so maybe you want to hold onto it. I've laid out quite a few things. There is four times as much in the book I sent you. They are not pat answers. They are documented and, frankly, I don't think you've touched on

one of them. Fruit fly experiments, they were certainly intended, it was Morgan that began them, certainly intended to try to cause macro-evolution to happen. It has not worked. Nobody is saying today that they think they can get macro-evolution out of the fruit flies but they started out trying to do that. Weissman tried chopping off tails of mice hoping to get some mice growing without tails. It never worked. What did he do, go through 100 generations or 50 generations, something like that?

Mutations, this is the mechanism that evolutionists say is going to produce new genetic material but what we've learned in the last, oh probably it's been 50 years since the neo-Darwinian interpretation that brought mutations in as their mechanism. What we've learned is mutations are so destructive. And I can lay in front of you evolutionists, dozens of them that will say the same thing I'm saying. They don't see how mutations could produce any new complexity or any new genetic material. Do you have any comments on that, Steve?

Dr. Richardson. I'll take a shot at some of that. Those experiments weren't really intended to show macro-evolution. They were addressed at the question of inheritance of acquired characters, which at that time was a major issue in the Soviet Union where they were sending the geneticists that were dealing with the Mendelian school, particular inheritance to Siberia where they were being killed...

Speaker. If you could summarize it as opposed to...

Dr. Richardson. ...discussing it. Okay, the bottom line is that the experiments that you quoted were not really addressed in any sense at macro-evolution. At the very least, they were addressed at micro-evolution, which is what I've worked on.

Dr. Brown. Well, you're the expert on that but my understanding is that their objectives when they started out was hoping to get macro-evolution occurring in the lab. Now they quickly learned that they weren't going to get it and I believe I read statements from some of these individuals saying that they're not getting what they had hoped to get. But you're the expert on Drosophila and I'll pass by that point.

But let's go back to these things that I've laid out. You have not touched on any of them. I think you'd agree that variations are bound, I could almost say I know of no breeder, I doubt if any breeder would disagree that you can cause variations to go only so far and then they stop. How do you get increasing complexity? The solar system, how did the solar system evolve? Why do we have planets going in the wrong direction? Do you know of any textbook, use my time if you want, do you know of any textbook that lays out, or encyclopedia, that lays out these theories on the evolution of the solar system that is objective enough to expose the teachers and the students to the evidence opposing it? Do you know of any? I don't.

How do heavy chemicals form? We have over 100 chemical elements. Three of them are supposedly formed by the big bang. How do we get the others? How do we get carbon? 18 1/2% of our bodies are carbon. How do we get iron? Lead? Uranium? Well, the

evolutionists have a real problem there and so they say it forms in the center of stars and when those stars explode as supernovas, they spew out all these heavy chemical elements. Well, they've never seen that happen and the rate at which supernovas are going off, at least in our galaxy, is too slow by a long shot for there to be enough of these heavy elements around in the age of the universe in order for the earth to form with the heavy elements. This was just recently published several months ago by Nature Magazine.

A point I made in the book I sent you is relating to the age of the universe, is we now have light gathering instruments so sensitive that galaxies can be seen so far away containing these heavy elements, that it takes 94% of the age of the universe by anybody's estimation. I don't care what you say Hubble's constant is, there is a squabble about Hubble's constant. It doesn't matter, 94% of the age of the universe it would take for that light from these distant galaxies to reach us, but those distant galaxies have these heavy elements in them. Now what does that mean? The big bang occurs, you're not producing heavy elements, you're producing stars with hydrogen helium in them. Okay, let's say that happens. Those stars have to evolve through an entire lifetime, produce those heavy elements in their interior, and then explode out. Somehow you've got to recollect all that matter. Now that's a real trick in itself and I can show you that that matter doesn't tend to concentrate, it tends to go the other way. But let's say it happens. It's going to take billions of years for that to happen and then once this second generation star forms, you've got to transmit that light to the earth and you only have 6% of the age of the universe to do it. There's just not enough time to do it in the opinion of most astronomers.

So there's a real crisis. I submit there are several possible explanations. Either those stars were created as they were, as they are now, and didn't go through that evolutionary sequence and the big bang never happened. Perhaps that distant light was traveling much faster to get here and it didn't take 94% of the age of the universe to get here but that's a real crisis.

Strahler in his book pointed out another very interesting crisis where the age of the universe was given at a certain age, just for discussion purposes, let's say it was 100 million years old, and then radiometric decay was discovered and using that technique, they determined that the rocks on the earth were many times greater than 100 million years old. Now you can't have rocks on the earth in a universe older than the universe and yet Strahler points out in that book how that was the case. A crisis, so what do they do? They look around and it won't take them long to find some justification for making the universe older. And they did.

Well, we've got the same problem again. You've got galaxies that are so far away it would take 94% of the age of the universe by evolutionists' estimation for that light to reach us, and yet those stars have to go through cycle after cycle of evolution and it would take too long. Care to comment on that?

Mr. Bratteng. Yeah, for one thing, evolutionists are not talking about those things, cosmologists and astronomers and astrophysicists are talking about those things and we're looking at an area that is particularly speculative.

Dr. Brown. Well, wait a minute. They are evolutionists. Though they are astonomers, they are evolutionists.

Mr. Bratteng. We're talking about evolution right here on this planet.

Dr. Brown. We're not talking about just the evolution of life, you've got evolved stars, you've got to evolve chemical elements, you've got to evolve galaxies, the solar system, the earth. Then maybe you can get your biological evolution going and if you can't do those other things, you're not even in business.

Dr. Richardson. Can I say something?

Dr. Brown. Let's wind this up. The moon, before we launched that Apollo program, the main reason for the Apollo program was to see how the moon evolved. It was thought by seeing how the moon evolved, we could see how the earth evolved. There were billions of our dollars spent on that and they were trying to find out how the moon evolves so we could see how the earth evolved. Well, what they found out is that all the theories on the moon's evolution are ridiculous and there is very little interest in discussing the evolution of the moon anymore.

Speaker. Dr. Brown, your time is up too.

Check out our websites:

biblequery.org – This site answers 7,700 Bible questions.

historycart.com – This site reveals early church history and doctrine, proving Roman Catholicism is not historically or doctrinally viable.

muslimhope.com – This site is a classic refutation of Islam, a counterfeit religion created by Mohammad.